



Western States Petroleum Association

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April 3, 2003

Dr. Elaine Chang
Deputy Executive Officer
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, California 91785

RE: **Preliminary Comments on SCAQMD AQMP**

Dear Dr. Chang:

The Western States Petroleum Association appreciates the opportunity to comment on the Draft Air Quality Management Plan (AQMP). As a member of the Advisory Committee, we have been able to review the efforts that you and your staff have made to make the AQMP accurate. We understand, as you do, that more work needs to be done.

WSPA has several concerns, some of which mirror issues that we have identified when reviewing previous AQMPs. We feel that the District's programs and analyses would be greatly strengthened if these concerns were addressed. We suggest that the District specifically and directly address the following concerns in both the AQMP and in the EIR.

WSPA comments have been divided into two categories. The first category addresses the substance and structure of the AQMP and proposed control measures. A second category, that presents more detailed comments on specific control measures, follows the initial comments on the AQMP. Our main concerns center around improvements in data presentation of emissions sectors and ozone concentration and exposure over time, as well as improvements in cost-effectiveness methodology, ozone reduction strategies, and evaluation of alternative strategies. Several specific concerns are noted on control measures for fluids catalytic cracking units and proposed natural gas fuels specifications.

Substance and Structure of the AQMP/Proposed Control Measures

Improvements in Data Presentation:

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- Ozone concentration through time. The AQMP is missing a graph depicting peak ozone concentration in the basin for the past 20 years. Members of the AQMP advisory committee know that the ozone concentration is lower and that it has decreased substantially over the past 20 years. However, the AQMP does not reflect this fact..
- Ozone exposure (above federal standard) through time. The AQMP is missing a graph showing ozone exposure (in per capita exposure) through the same 20 year period. We believe the District should be interested in showing that the peak ozone concentration has moved eastward to near Lake Arrowhead, while at the same time, the per capita exposure to ozone concentrations above the federal standard has been dramatically reduced.
- Change on ozone concentration and exposure through time. The AQMP needs a similar analysis showing the rate of change of ozone concentration and exposure for various stations in the basin. As indicated earlier, the reductions in both total exposure and per capita exposure need to be clearly documented.

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- Emissions by sector. The AQMP should show in more detail the reductions in emissions by various sectors (perhaps shown by SIC code). The change in proportion of emissions from various source categories should also be noted, so that the public can understand there are diminishing results from continued emphasis on some stationary sources. At a minimum, the AQMP should show the top 10% of emissions by source category (again by SIC code).

Improvements in Ozone Reduction Strategy:

The District needs to improve the AQMP's documentation of: the selection process for its ozone reduction strategy; what factors went into choosing this strategy; and, possible existing alternative strategies. WSPA and some members of the AQMP Advisory Committee have consistently advocated for an analysis of alternative strategies, the basis for choosing an ozone strategy and the factors influencing how the strategy was determined.

Key factors that need detailed explanation include:

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- Cost effectiveness determination.
 - The AQMP cites instances where the cost-effectiveness of control measures may be near \$5,000/ton – yet current rules being adopted by the AQMD are already much greater than \$5,000/ton. The AQMP should discuss both the apparent disparity in anticipated cost-effectiveness measures, as well as reasons why more cost effective measures were not adopted sooner.

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- The AQMP must show cost-effectiveness as a range of costs rather than point estimates. We believe the District currently has insufficient data to determine the specific cost-effectiveness or \$/ton cost of a control measure. Hence, showing only one number gives an erroneous suggestion of precision when the accuracy of the number is, itself, an unknown.
- The AQMP should show cost-effectiveness estimates using both the CARB/USEPA recommended method (levelized cash flow) for determining cost-effectiveness and the method used by the District (discounted cash flow). The District's reluctance to use both measures makes comparisons of cost between districts, between states and between industries difficult if not impossible. The District, in its attempt to show the cost-effectiveness of its AQMP control strategies, would enhance its ability to evaluate costs by using more widely accepted cost-effectiveness determinations.

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- Alternative Strategies. The AQMP needs to contain a detailed discussion of alternative strategies that either were evaluated and then discarded, or that could also be used to attain federal air quality standards. The following suggestions for inclusion into the AQMP were raised during a March 18th discussion of the AQMP Advisory Committee:
- A discussion of demand-side controls rather than strictly limiting the District to supply-side mechanisms.
 - Strategies that look more closely at reactivity-weighted controls.
 - A comparison using EKMA diagrams of the path to attainment as depicted by the AQMP with other, potentially shorter pathways to attainment.
 - Strategies to gain emission reductions from non-regulated sources as a means for realizing emission reductions from less cost-efficient regulations
 - Analysis of older, more polluting vehicles and mechanisms to reduce this population of vehicles. If, as was suggested, 20% of cars emit 80% of the mobile source emissions, then the AQMP should target elimination of those vehicles.
 - In all comparisons, the district should show the VOC:NOx ratios in various regions resulting from the AQMP and alternatives.

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- Emission Reductions – Assignment to Agencies. While WSPA understands the District's interest in assigning emission reductions to agencies at the outset of the AQMP, it seems that such an assignment presupposes that no alternative approaches can be utilized. Based on recent litigation, it appears that the District considers a measure virtually unchangeable once an AQMP is adopted. Although WSPA disagrees with this position, we are concerned that, once adopted, the District will consider the assignments of emission reductions to agencies unchangeable.

WSPA recommends that the District staff and the AQMP should adopt a more flexible approach that identifies options to attainment, costs and cost-effectiveness of these alternatives, feasibility and probability of identifying control strategies. Then, let the public and Board decide. This is especially important in light of the pace at which

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emissions from various sectors change (i.e., mobile sources). Such rapid changes can and probably do change the cost-effectiveness of stationary source controls. Hence, it behooves the District and the AQMP to expand rather than limit flexibility to choose alternative air quality improvement options.

Detailed Comments on Proposed AQMP Control Measures

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CMB-09 - Emission Reductions from Petroleum Fluid Catalytic Cracking Units:

There are several problems with this control measure. First, the PM-10 inventory for refinery FCCUs is overstated because of reliance on a faulty test method that converts sulfur dioxide to sulfates. Of the estimated 6.3 tons/day emissions of PM-10, 5.5 tons/day is attributed to condensable sulfate, which is mostly the sulfate artifact from oxidation of sulfur dioxide to sulfates in the test apparatus (i.e. impingers). Sulfur dioxide is a gas at ambient temperature and should not be counted as particulate emissions from FCCUs. Secondly, the control measure identifies use of SOx reducing catalyst and other sulfur removing technologies as control options for reducing condensable particulates. Again, this is faulty reasoning because of the faulty test results. These technologies may reduce sulfur dioxide emissions, but they do not reduce primary PM-10. Lastly, if sulfur dioxide emissions are contributing significantly to PM-10 in the South Coast Air Basin by the eventual oxidation to sulfate over time, then further reduction in sulfur dioxide emissions need to be addressed on a basin-wide basis. It is not fair to target only refinery FCCUs, which is what this control measure does.

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CMB-10 - Additional Reductions for NOx RECLAIM:

This control measure identifies additional NOx reductions from RECLAIM facilities by either an across-the-board shave of ending NOx allocations, or the overlay of source-specific requirements on certain facilities. We are opposed to the latter option (i.e. overlay of source-specific requirements) as this defeats the purpose of RECLAIM in allowing the market to drive the most efficient and cost-effective emission reductions.

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MSC-08 - Further Emission Reductions from Large VOC Sources:

This control measure identifies implementation of facility-specific emission reduction plans as a means of achieving VOC reductions from large sources. It further identifies "product reformulation" as a possible control measure. If the intent is to apply this to refinery products, it is inappropriate and beyond SCAQMD's authority. Also, imposition of a mitigation fee is identified as a control option. This may be a viable option among other feasible and cost-effective options; however, it should not be considered an option if there are not other technically feasible and cost-effective options to choose from. In other

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words, it is not fair to extract mitigation fees from facilities that have already implemented all known feasible and cost-effective mitigation measures.

Natural Gas Fuel Specifications:

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SCAQMD has made a tentative suggestion that lowering the heating value of natural gas might result in overall emission reductions in the District. In support of this suggestion the District references a presentation to the CAPCOA Mobile Source and Fuels Subcommittee that is not attached to the document and, therefore, cannot be evaluated and referenced in these comments. The District goes on to state that the emissions reduction anticipated and the appropriate test methods "are uncertain".

The control measure proposed by SCAQMD is the establishment of an upper HHV limit for natural gas fuel. Although not explicitly set out in the control measure proposed, this could require the treatment of the majority of California produced natural gas fuel and could impact the ability of some natural gas producers to supply gas to the District. Notwithstanding the questionable legal basis for such a measure¹ or the substantial interstate commerce implications of this strategy, there is no evidence presented that this potential control measure would result in lower net emissions. The term "hot gas" is not a recognizable term in the industry or the regulatory community, although it is clear from the report that what the SCAQMD is referring to is commonly known as "high energy" or "rich" natural gas. Reducing the BTU content of this high energy fuel means more fuel would have to be consumed to achieve the same energy level. The trade off between removing small amounts of the "high energy" component (e.g. ethane) and increasing the amount of the "low energy" component (e.g. methane) has not been proven to generate a net decrease in emissions.

WSPA's comments on the proposed amendments to the specifications for compressed natural gas intended for use in motor vehicles also apply here. Additional natural gas treatment facilities would be required if all commercial grade natural gas entering the pipeline transportation network was required to meet new standards. For example, new facilities would need to be constructed or existing facilities expanded to provide additional refrigeration, turbo expansion or membrane separation to remove the heavier molecular weight streams such as ethanes and propanes from the natural gas. Refrigeration would likely be the most practical of these methods on a large scale retrofit basis. Construction would have environmental impacts including noise, dust and air emissions

¹ All natural gas is produced to meet the quality requirements for the gas transmission pipeline, with enough energy content to satisfy the consumers needs and efficient use of the pipelines, but not so much that hydrocarbon liquids condense in the pipeline. Gas transmission pipelines also limit the amount of inerts, such as carbon dioxide, which dilute the fuel. These requirements are set by the California Public Utility Commission.

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associated with earth moving and the use of heavy equipment. Depending on the location of the facilities, impacts on sensitive habitats and species also would be possible.

Air emissions would be expected during the operational phase as well, particularly fugitive hydrocarbon emissions from new or expanded treatment facilities. In addition, operation of refrigeration facilities would consume substantial amounts of electrical power, which in turn requires combustion of fuel and thus air emissions. There also would be impacts from the disposition of the ethane and larger

molecules removed in the treatment facilities. It is unclear what would be done with these materials, since there is no independent market for ethane in California. The only practical large-volume use for ethane in the region is as fuel, such as for boilers and power turbines, so the ethane most likely would continue to be burned in the region. The effect of the proposal on regional emissions will most likely be neutral; but consideration should be given to a potential emissions increase due to combustion efficiency differences in the sources that will consume the removed ethane. Construction and operation of facilities to transport and potentially store the ethane would also result in environmental impacts. To fully quantify the impact, an equipment-by-equipment evaluation is required.

There are several more effective and efficient methods to reduce overall emissions from the combustion of natural gas. For example, flame temperature can be reduced with the injection of water/steam, thereby reducing NOx emissions. In addition, other methods are available for the consumer to efficiently control NOx, including staging the air, staging the fuel, recirculating flue gas, and premixing the fuel and air. NOx reduction technology is readily available for use by the consumer, which would reduce NOx emissions without limiting the supply of natural gas produced in California and/or requiring increased reliance on out-of-state sources of natural gas.

Also, it seems that CAPCOA's reference to "normal" natural gas is an indirect reference to interstate pipeline gas. WSPA cannot help but notice that this concern appears to be consistent with those of a major utility that would prefer that heating value of natural gas be the responsibility of natural gas suppliers. The District should not propose regulations that might affect inter and intra-state natural gas producer issues.

Finally the control of fuel-air mixtures is common on industrial and commercial burners. While we understand that there might be the perception that natural gas mixtures with modestly higher heating values might be responsible for higher NOx emissions, we would be interested in seeing any data to substantiate this perception. Absent any data, neither the District nor CARB should support any such regulatory concept without further scientific scrutiny.

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WSPA would also like the District to comment on the flow of natural gas from the Central Valley and the Coast to the South Coast Region. WSPA is unaware of any conditions where this volume has increased such that the heating value of natural gas consumed in the region would be affected. Has such a situation occurred? If so, additional documentation is necessary.

Other General Comments:

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➤ The District's fleet rules are not included in the SIP. Shouldn't emission reductions from these control measures be included in the emissions inventory? Is there a reason that the SCAQMD chose not to include these controls in the SIP? Are there questions concerning the enforceability of these measures or the success in achieving emission reductions cited by the District?

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➤ The AQMP does not make any effort to address the economic natural gas specification. The public would be much better served if the EIR, Socioeconomic document and AQMP were released and evaluated simultaneously.

The observations and alternatives referenced in these comments should be considered in detail as the District moves forward with its study of potential control measures. If you have any comments or questions, I am available to assist you. Please feel free to contact me at (310) 808-2149.

Sincerely,

cc: Joe Sparano, WSPA President
Cathy Reheis-Boyd, WSPA COO & Chief of Staff
Barry Wallerstein, D.Env.
Laki Tisopulos, Ph.D., P.E.